REMARKS/ARGUMENTS

In the Office Action, the Examiner has rejected independent claims 9 and 17 based on Krueger in view of Hegner and independent claim 16 based on Krueger in view of Hegner and further in view of Lassow. As will be discussed further below, Applicant respectfully traverses the Examiner's rejections.

With respect to the Examiner's rejections of independent claims 9 and 17 based on Krueger in view of Hegner, the Examiner acknowledges that Krueger does not disclose a smelting crucible that is manufactured of boron nitride. However, the Examiner argues that Hegner discloses a crucible manufactured of boron nitride and that it would have been obvious to include to the crucible of Hegner in Krueger.

Applicant respectfully submits that, contrary to the Examiner's argument for the reason that it would have been obvious to one skilled in the art to combine the references, that there would be no motivation to combine the references based on the teachings of the references. The Examiner argues that it would have been obvious to modify Krueger's casting of a superalloy by Hegner's casting technique for an alloy. Applicant respectfully submits that there would be no motivation to modify a casting technique for a superalloy by a casting technique for an alloy.

In Hegner, high-density graphite or boron nitride is used for the crucible to solve the problem of the formed brazing alloy strip 6 from fraying or breaking when formed. Col. 2, lines 37-51. This problem occurs because the brazing alloy wets the crucible, and thus, when the molten alloy is pressed through an opening in the crucible to form the alloy strip, this wetting characteristic of the alloy causes the alloy to solidify in other areas of the crucible and causes the formed alloy strip to fray or break. The poor thermal characteristics of the crucible, in combination with the wetting characteristic of the brazing alloy, causes this problem. Therefore, Hegner teaches that, to solve this ***specific problem*** of solidifying of the alloy in the crucible which is ***caused by*** the combination of an ***alloy that is wettable*** with a ***crucible that has poor thermal conductivity***

and which ***results in*** a frayed or broken formed brazing alloy strip, a highly thermally conductive nonmetallic material is chosen for the crucible.

Thus, Applicant respectfully submits that Hegner only teaches that a highly thermally conductive nonmetallic material is chosen for the crucible in the circumstance where a particular alloy, i.e., a brazing alloy that is wettable, is used in combination with a crucible that has poor thermal conductivity. Therefore, Applicant respectfully submits that there could be no motivation for one skilled in the art to utilize this teaching of Hegner, which solves the problem of an ***alloy*** for ***brazing*** that ***solidifies in a crucible with poor thermal characteristics*** and ***which causes breaks in the formed alloy brazing strip***, for modifying Krueger's method for processing a ***superalloy*** for use in a ***turbine engine***. Applicant respectfully submits that the two references have totally different principles of operation, and as such, there would be no motivation to modify Krueger's method for processing a superalloy for use in a turbine engine by using Hegner's crucible, which is used to prevent an alloy for brazing from solidifying in a crucible with poor thermal characteristics, which causes breaks in the formed alloy brazing strip.

As such, contrary to the Examiner's argument in the Office Action, based on the teaching of Hegner, there could be no motivation for modifying Krueger by Hegner for the reason argued by the Examiner of "inherently creat[ing] a product with less inclusions." Applicant respectfully submits that this reason could not be a motivation for combining the references. There is no teaching in either reference for creating a product with less inclusions that could serve as a motivation for modifying Krueger, as argued by the Examiner. Applicant respectfully submits that such a motivation can only be hindsight based on Applicant's own teachings. Applicant respectfully submits that only Applicant has disclosed, and claimed, the use of a boron nitride crucible for casting of superalloy components or parts for gas turbines. In Applicant's invention, the use of boron nitride for the crucible both avoids the incorporation of oxidic inclusions in the component or part and provides for the detection of inclusions

that might form due to abrasion or wear of the boron nitride since the undesired boron nitride inclusions can be reliably detected with an x-ray or neutron radiography test since boron induces strong neutron weakening as compared with all other alloy elements. See Applicant's specification at least at paras. 0012-0014. Therefore, Applicant respectfully submits that independent claims 9 and 17 are allowable over Krueger and Hegner.

With respect to independent claim 16, the Examiner has rejected claim 16 based on Krueger in view of Hegner and further in view of Lassow. First, Applicant respectfully submits that claim 16 is allowable over the cited references for the reasons argued above regarding there being no motivation for modifying Krueger based on Hegner. Second, Applicant further respectfully submits that even if in any way Krueger could be modified by Hegner, there would be no motivation for further modifying Krueger by Lassow, and even if Krueger could be modified by Lassow, Applicant's invention of independent claim 16 is still not disclosed by the combined references.

In the Office Action, the Examiner acknowledges that Krueger as modified by Hegner still does not disclose subsequently subjecting the part to an inspection for an undesired inclusion. The Examiner argues, however, that Lassow broadly discloses subsequently subjecting a part to an inspection for an undesired inclusion and that it would have been obvious to include Lassow's inspection for an undesired inclusion in the modified Krueger reference.

However, Applicant respectfully submits that if the Examiner's argument can be made for the motivation for modifying Krueger by Hegner, i.e., for inherently creating a product with less inclusions, that there would be no need to further modify Krueger by Lassow. If the product is created with less inclusions, there would be no reason for including the subsequent Lassow inspection method. Therefore, Applicant respectfully submits that independent claim 16 is allowable for at least this additional reason.

Further, Applicant respectfully submits that even if in any way Krueger can be further modified by Lassow, that the combined references still do not

disclose all of the features of independent claim 16. In claim 16, Applicant's claim the relationship between the boron nitride crucible ***and*** the inspection for an undesired boron nitride inclusion. In Lassow, any disclosed subsequent inspection would not in any way be used in connection with a boron nitride crucible of a modified Krueger reference. Lassow's subsequent inspection utilizes a completely different principle of operation than Applicant's claimed inspection. In Lassow, a ceramic mold facecoat slurry is used in the formation of a shell mold for casting of an alloy. The ceramic mold facecoat slurry, which is disclosed as comprising erbium bearing ceramic particulates and other optional ceramic particulates, provides for x-ray or neutron-ray detectability of any sub-surface facecoat inclusions that may be present in the casted part. See col. 2, line 65 to col. 3, line 4; col. 3, lines 21-26; col. 3, lines 45-56; and col. 4, lines 22-27.

Therefore, Applicant respectfully submits that even if Krueger can be further modified by Lassow, that the combined references still do not disclose Applicant's claimed relationship in independent claim 16, and dependent claim 18 which depends from independent claim 17, of the boron nitride crucible ***and*** the inspection for an undesired boron nitride inclusion. If Krueger was further modified by Lassow, all that would result is that a ceramic mold facecoat slurry would be used in the formation of the boron nitride crucible of the modified Krueger reference for casting of an alloy. The ceramic mold facecoat slurry, comprising erbium bearing ceramic particulates and other optional ceramic particulates, would then be used for the subsequent inspection for ceramic mold facecoat slurry inclusions that may be present in the casted part. Thus, the modified references still would not disclose Applicant's claimed method of using a boron nitride crucible ***and*** the inspection for an undesired boron nitride inclusion in the casted part. Lassow utilizes a completely different principle of operation than Applicant's invention. Lassow uses a ceramic mold facecoat slurry, comprising erbium bearing ceramic particulates and other optional ceramic particulates, and subsequently inspects for ceramic mold facecoat slurry

inclusions that may be present in the casted part. Applicant's invention uses a boron nitride crucible ***and*** subsequently inspects for an undesired boron nitride inclusion in the casted part. Applicant respectfully submits that because of the different principle of operation of Lassow, contrary to the Examiner's argument in the Office Action, if Lassow was used with the modified Krueger reference, the inclusions would not be boron nitride inclusions with the use of a boron nitride crucible, but rather, would still be ceramic mold facecoat slurry inclusions as taught by Lassow. Applicant respectfully submits that it is only Applicant that discloses and claims the relationship between the boron nitride crucible ***and*** the inspection for an undesired boron nitride inclusion. Therefore, Applicant respectfully submits that the Examiner's argument can only be hindsight based on Applicant's own teachings.

Therefore, Applicant respectfully submits that even if Krueger can be further modified by Lassow, that the further modified Krueger reference still does not disclose Applicant's invention of independent claim 16, and dependent claim 18. As such, Applicant respectfully submits that independent claim 16, and dependent claim 18, are allowable over the cited references for at least this additional reason.

Further in the Office Action, the Examiner is requiring a certified copy of German Patent Application No. 10319495.9, from which Applicant claims priority. Applicant respectfully submits that the present application is a National Phase application in the U.S. of PCT International Application No. PCT/DE2004/000587. Applicant respectfully submits that a certified copy of German Patent Application No. 10319495.9 is not required to be filed in this U.S. National Phase application for Applicant's priority claim. The German priority document was filed in the International Bureau on May 14, 2004. Therefore, Applicant respectfully requests that the Examiner withdraw any requirement for filing a certified copy of German Patent Application No. 10319495.9 in this patent application and acknowledge receipt of the priority documents from the

International Bureau on the PTOL-326 form, or equivalent, in the next communication from the Examiner.

Further yet in the Office Action, the Examiner states that the application admits of illustration by a drawing and the Examiner is requiring a drawing to facilitate understanding of the invention. First, Applicant respectfully submits that the application does contain a drawing Figure 1. The published International Application, i.e., WO 2004/096467, includes the drawing figure. Further, Applicant filed a copy of Figure 1 in the application documents filed on October 28, 2005, when entering the National Phase in the U.S. Therefore, Applicant respectfully submits that a drawing is a part of the patent application.

Additionally, Applicant respectfully submits that the Examiner cannot require further drawings if the Examiner desires further drawings. As discussed above, this application is a National Phase application of PCT International Application No. PCT/DE2004/000587, and the drawing requirements for this National Phase application are governed by M.P.E.P. ¶ 1893.03(f), which provides that the drawings for the national stage application must comply with PCT Rule 11. As further stated in this M.P.E.P. section, "[t]he USPTO may not impose requirements beyond those imposed by the Patent Cooperation Treaty (e.g., PCT Rule 11)."

Therefore, Applicant respectfully submits that a drawing Figure 1 has been provided in the application, the drawing complies with PCT Rule 11, the Examiner cannot place additional requirements on the drawings beyond those that are imposed by PCT Rule 11, and therefore, respectfully requests that the Examiner withdraw the drawing objections.

Applicant respectfully submits that the application is in condition for allowance. If there are any questions regarding this Response or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

As provide for above, this paper includes a Petition for an Extension of Time sufficient to effect a timely response. Please charge any deficiency in fees,

or credit any overpayment of fees, to Deposit Account No. 05-1323 (Docket No. 011235.56870US).

Respectfully submitted,

CROWELL & MORING LLP

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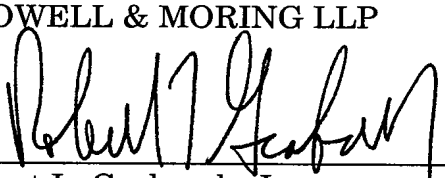
By 

Robert L. Grabarek, Jr.
Reg. No. 40,625
Tel.: (949) 263-8400 (Pacific Coast)

Intellectual Property Group
P.O. Box 14300
Washington, D.C. 20044-4300

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